AMENDMENTS TO THE CLAIMS

Please amend claims 1, 2, 17 and 28. Following is a complete listing of the claims, as amended.

1. (Currently Amended) ~~An~~ transonic airfoil, comprising:

an upper surface portion having an upper surface positioned to face generally upwardly during level flight;

a lower surface portion having a leading edge region and a trailing edge region, the lower surface portion further having a lower surface positioned to face generally downwardly during level flight; and

a shock control protrusion extending ~~away~~ from the lower surface and having an aft fairing generally smoothly blended with the lower surface, the shock control protrusion being positioned to generate a shock extending away from the lower surface at ~~at least one flight condition~~level flight Mach numbers of at least 0.80.

2. (Currently Amended) The airfoil of claim 1 wherein the lower surface and upper surface are configured for cruise ~~and~~ at subsonic Mach numbers.

3. (Original) The airfoil of claim 1 wherein the shock control protrusion is fixed relative to the lower surface portion of the airfoil.

4. (Withdrawn) The airfoil of claim 1 wherein the shock control protrusion is movable relative to the lower surface portion of the airfoil.

5. (Original) The airfoil of claim 1 wherein the shock control protrusion includes a plurality of successive segments and, for at least one freestream Mach number, at least

some of the successive segments are aligned with characteristic waves generated by the previous segment when the airfoil is flown at the at least one freestream Mach number.

6. (Original) The airfoil of claim 1 wherein the shock control protrusion includes a plurality of successive segments having generally tangential intersections and, for at least one freestream Mach number, at least some of the successive segments are aligned with characteristic waves generated by the previous segment when the airfoil is flown at the at least one freestream Mach number.

7. (Original) The airfoil of claim 1 wherein the shock control protrusion has a forward portion smoothly blended with the lower surface at a first location and wherein the shock control protrusion has an aft portion smoothly blended with the lower surface at a second location aft of the first location.

8. (Withdrawn) The airfoil of claim 1 wherein the shock control protrusion includes a single shock control protrusion extending in a generally continuous manner from an inboard location on the lower surface to an outboard location on the lower surface.

9. (Original) The airfoil of claim 1 wherein the shock control protrusion includes one of a plurality of shock control protrusions extending along an axis from an inboard location on the lower surface to an outboard location on the lower surface.

10. (Original) The airfoil of claim 1 wherein the lower surface portion has an expected boundary layer thickness at a selected freestream Mach number and airfoil location, and wherein the shock control protrusion is positioned at the airfoil location, with a maximum extent of the shock control protrusion away from the lower surface portion being of the same order as the expected boundary layer thickness.

11. (Original) The airfoil of claim 1 wherein the upper and lower surface portions include upper and lower surface portions of an aircraft wing.

12. (Original) The airfoil of claim 1 wherein the shock control protrusion has a chordwise extent in the range of from about 5% to about 25% of a chord length of the airfoil.

13. (Original) The airfoil of claim 1 wherein the upper and lower surface portions include upper and lower surface portions of a movable aircraft flight control device.

14. (Withdrawn) The airfoil of claim 1 wherein the upper and lower surface portions include upper and lower surface portions of a rotorcraft rotor.

15. (Original) The airfoil of claim 1 wherein the upper and lower surface portions define a chord length and wherein the shock control protrusion is positioned aft of a leading edge of the airfoil by a distance in the range of from about 20% to about 50% of the chord length.

16. (Previously Presented) The airfoil of claim 1 wherein the shock control protrusion includes a first shock control protrusion at a first chordwise location, and wherein the airfoil further comprises a second shock control protrusion at a second chordwise location different than the first chordwise location.

17. (Currently Amended) A transonic airfoil, comprising:

an upper surface portion having an upper surface positioned to face generally upwardly during level flight;

a lower surface portion having a leading edge region and a trailing edge region, the lower surface portion further having a lower surface positioned to face generally downwardly during level flight; and

a plurality of shock control protrusions extending ~~away~~ from the lower surface, with individual shock control protrusions being positioned to generate a shock extending away from the lower surface at ~~at least one flight condition~~level flight Mach numbers of at least 0.80.

18. (Original) The airfoil of claim 17 wherein the leading edge region includes a leading edge that is swept along a first axis, and wherein the individual shock control protrusions are aligned along a second axis generally parallel to the first axis.

19. (Original) The airfoil of claim 17 wherein the individual shock control protrusions are blended with the lower surface, with an edge of the shock control portions being generally tangential to the lower surface.

20. (Original) The airfoil of claim 17 wherein the shock control protrusions have a generally circular planform shape.

21. (Original) The airfoil of claim 17 wherein the shock control protrusions are fixed relative to the lower surface.

22. (Withdrawn) The airfoil of claim 17 wherein the shock control protrusions are movable relative to the lower surface.

23-27. (Cancelled)

28. (Currently Amended) A~~n~~ transonic aircraft, comprising:

a fuselage; and

an airfoil coupled to the fuselage, the airfoil including:

an upper surface portion having an upper surface positioned to face generally upwardly during level flight;

a lower surface portion having a leading edge region and a trailing edge region, the lower surface portion further having a lower surface positioned to face generally downwardly during level flight; and

a shock control protrusion extending ~~away~~ from the lower surface and having an aft fairing generally smoothly blended with the lower surface, the shock control protrusion being positioned to generate a shock extending away from the lower surface at ~~at least one flight condition~~level flight Mach numbers of at least 0.80.

29. (Previously Presented) The aircraft of claim 28 wherein the airfoil includes only a wing.

30. (Withdrawn) The aircraft of claim 28 wherein the airfoil includes at least one of a wing, a horizontal stabilizer, a tail, a rotor, a canard, and a movable flight control surface.

31. (Original) The airfoil of claim 28 wherein the shock control protrusion is fixed relative to the lower surface portion of the airfoil.

32. (Original) The airfoil of claim 28 wherein the shock control protrusion includes a plurality of successive segments and, for at least one freestream Mach number, the successive segments are aligned with characteristic waves generated by the previous segment when the airfoil is flown at the at least one freestream Mach number.

33. (Withdrawn) The airfoil of claim 28 wherein the shock control protrusion includes a single shock control protrusion extending in a generally continuous manner from an inboard location on the lower surface to an outboard location on the lower surface.

34. (Original) The airfoil of claim 28 wherein the shock control protrusion includes one of a plurality of shock control protrusions extending along an axis from an inboard location on the lower surface to an outboard location on the lower surface.

35-48. (Cancelled)